



US Army Corps
of Engineers®

HEADQUARTERS

ENGINEERING & CONSTRUCTION NEWS

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NOVEMBER 2000

NOVEMBER'S THEME:

Engineering & Construction Infrastructure Branch

DWIGHT'S NOTES

The past 30 days have been exciting, refreshing, and rewarding for the HQUSACE leadership. We are now in the thick of transition planning with Lieutenant General Robert Flowers, the new 50th Chief of Engineers. General Flowers has set a quick pace during the first month of his tour. He has reached out to many inside and outside the Corps to develop productive relationships. He has set an optimistic tone that is infectious to all he meets. He has expressed his intent early and often. By spring his agenda will be in place in the form of the USACE Campaign Plan. Expect General Flowers to build on the changes initiated by General Ballard. Expect General Flowers to invest in us as individuals and to communicate strategically about the reputation of this great organization.

You'll be heartened to know that the Chief will concentrate on sustaining the Corps World Class Workforce, with emphasis on our technical capabilities. He has placed E&C "at the table" in key forums, such as his Vision and Campaign Plan development team. He's wrestling with options that will eventually reunite E&C at the GAO building with the rest of the headquarters. He's been highly visible in meetings with our partners in industry and professional organizations. So be optimistic about your future in the Corps for he will help ensure we remain "The World's Premier Engineering Organization".

I've just returned from three very important USACE conferences: the Senior Leader Conference in Norfolk, the Project Delivery Team Conference in Seattle, and the Chief's Transition Conference at HEC. General Flowers attended and spoke at each conference. His message was positive, and was well received. Corporately, he wants us to provide excellence with integrity and credibility; serve the Army and its transformation; serve the Nation through effective advocacy for water resource development; accomplish environmental stewardship; and seek consensus – always through doing what is right. Individually, he wants us to know our job; be situationally aware; be healthy; and treat others with dignity and respect. You should also expect continued emphasis on empowerment – get ready to receive "Just Do It" cards!

The Senior Leader Conference focused on working through all aspects of our corporate strategic vision. While this work will continue over the next several months, it is worth noting that the vision will be refined rather than extensively overhauled. General Officers and Senior Executives agreed that

Dwight's Notes (continued)

we were headed on the right path, but needed to “refresh” the Corps Vision to meet the challenges of the next four years.

The Project Delivery Team Conference was a big event, overflowing with about three hundred participants. It was also a big success. The clear message from this conference is the fundamental importance of the Project Management Business Process, of vertical and horizontal teamwork, and of the inclusiveness needed within our Project Delivery Teams (PDT).

The Transition Conference was attended by well over 60 people, half from USACE and half from partners and stakeholders. Quality time was spent listening to the expectations of leaders from the Army, Air Force, navigation and flood control interest groups, professional organizations, environmental advocates, and the Administration and Congress. Partnering at its best. We captured the essence of this feedback, and that from the SLC in recommendations to the Chief that will affect the messages in the refreshed Vision and new Campaign Plan.

Back on the home front, we have good news on our appropriations and authorizations bills. The President signed our FY 2001 Civil Works Appropriations bill on 27 October 2000, as part of the VA-HUD Appropriations Act. The General Investigations Appropriation for FY 2001 is \$160 million, \$22 million over the budget request. The Construction General Account received \$1.7 billion, an increase of \$371 million over budget. It includes fifty-two new starts, of which twenty are environmental. The Operations and Maintenance General Account received \$1.9 billion. The Flood Control, Mississippi River and Tributaries Account received \$334 million. The Civil Works Appropriations provides an excellent work program for our Engineering and Construction elements. Our challenge is to fully execute this program along with our Military Programs commitments.

More recently, the House of Representatives passed and sent to the President the Water Resources Development Act of 2000. WRDA highlights include authorization of the \$7.8 billion Everglades restoration plan and authorization of \$7.3 billion worth of projects. The Act also authorizes in-kind service credits for the full non-Federal share of feasibility study costs which will allow the sponsor's to provide some of the engineering services during the feasibility phase using their own in-house engineering staffs. The Act is also noteworthy for including nine regional environmental restoration authorities that will empower \$870 million in work, with a Federal share estimated at \$566 million. Another addition to the act authorizes \$25 million per year for the Corps to assess the condition of dams constructed by the WPA and CCC in the 1930's and 1940's and to make Dam Safety repairs modifications to those dams.

The theme for this issue is "Engineering and Construction -- Infrastructure Branch". This is the fourth of six issues addressing the reorganized Engineering and Construction Division. The purpose of the theme article in these issues is to acquaint you with the new structure of the division and the functions of each branch in the division. The new Infrastructure Branch covers a wide range of functions that effect our Civil Works and Military infrastructure. Roy E. Braden and his able team have a variety of specific programs that effect all Districts and Divisions. They manage the Dam Safety, Bridge Safety, Cost Engineering, and DA Facilities Standardization programs. Other important areas handled by the Infrastructure Branch include quality management, private sector contracting, and quality workforce. One team member, Charles Pearre, is the Department of Defense representative to the Interagency Committee on Dam Safety and is actively involve in program management and oversight in

Dwight's Notes (continued)

coordination with other Federal agencies and the various states. Another member of the branch, Paul Tan, manages the bridge safety program for the Corps of Engineers and for Army installations. With the Cost Engineering team leader position vacant, Ray Lynn and Robert Wong have been providing leadership in developing improvements to our cost estimating systems for both Civil Works and Military projects. In the area of Facilities Standardization, Al Young is providing leadership in establishing standards for new construction on installations. I am very pleased with the progress this new branch has made in the first few months of its existence.

The move of 60 E&C team members to the Kingman Building was completed on 1 November. Our completely renovated third floor space is first-class. The campus-like setting at the Humphrey's Engineering Center provides a relaxed setting, which is improving morale. Please come visit us at our new home when you are in D.C.

This month we held a retirement luncheon for Arthur Walz. Art retired after 38 years of Federal service. Art is considered, by his peers, to be one of the world's top geotechnical and dam safety experts. In addition to his work at HQUSACE, Art, who is a retired Army Reserve Colonel, served on active duty during Dessert Storm and was active in helping restore the infrastructure of Kuwait after the war. Art is world-class in every way. I wish him well as he moves on to the next stage in his career. Expect to see his name pop up every once in a while whenever geotechnical engineering and dam safety issue are in the news.

Essayons,
Dwight

(Editors' note: If you want to share your thoughts with our readers regarding Dwight's Notes send an email to the E&C News editor (charles.pearre@usace.army.mil). A synopsis of your comments will be published in the next issue.)

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Engineering & Construction

Infrastructure Branch

INFRASTRUCTURE BRANCH, ENGINEERING AND CONSTRUCTION DIVISION

Infrastructure Branch is responsible for a variety of programs that effect the Civil Works and Military installation facilities. The various teams in the branch and their program activities include:

Cost & Economics Team -- The team consists of 5 members and the team leader (position is currently vacant). The primary areas of responsibility include civil works, military, environmental and support for others cost engineering policy and guidance; Tri-Service partnering; MILCON cost estimating and economic analysis; cost engineering automation support; cost engineering/economics training, and internet support for cost engineering.

The team Directs the development, establishment and implementation of cost engineering policy and criteria for use by cost engineers and cost estimators in support of Civil Works, Military Programs, Environmental, and support for other construction projects. Its works includes Army Technical Manuals, Technical Instructions, Engineer Regulations, Engineer Manuals, Engineer Pamphlets, and Inflation Rates and Foreign Currency Exchange Rates for Military Construction.

The team works in partnership with the Air Force and Navy in numerous Tri-Service programs. HQUSACE cost engineering provides support to OSD for the development and annual update of the DOD Area Cost Factors (ACF) and Military Facilities Pricing Guide. The ACF and facility cost guide are widely used by MACOM & Army installations for developing planning and programming cost estimates for MILCON projects. The team developed and maintains the Tri-Service Cost Engineering Certification Program. It coordinates and organizes the Tri-Service Cost Engineering Steering Committee meeting and the Tri-Service Cost Engineering Training Conference. The team also coordinates with Air Force and Navy for the development, enhancement, and maintenance of the Tri-Service Cost Engineering System (TRACES).

The Costs and Estimates Team provides MILCON cost estimating and economic analysis support to Military Programs. The team evaluates and validates the DD Forms 1391/ENG Forms 3086 budget estimates submitted by MACOM/Installations and USACE districts. It provides cost engineering consultation to Army Installations and MACOM engineers for military construction programming and budgeting and provides cost engineering consultation to USACE divisions and districts for DD Form 1391 review, certification and budget cost estimate preparation and submission. The team is

responsible for the annual update of unit price book, equipment manual, and labor rates for use in preparing independent government cost estimates for bid awards. The team provides economic analysis guidance, criteria and methodology for various facilities, energy and technology initiatives in support of the Army military programs. It analyzes DD Form 1391 economic justification including the life cycle costs and benefits of proposed and alternate facilities to ensure that data and estimates are analytically sound for submittal to OSD, OMB and the congress.

This team also provides guidance to assign cost engineering technical centers of expertise for the management, development, and maintenance of computer automated tools for cost engineering to improve efficiency and accuracy of cost estimates. This work includes the Micro-Computer Aided Cost Estimating System (MCACES) used by the USACE districts for preparing detailed cost estimates and the Unit Price Book (UPB) which is the pricing support data base for the Tri-Service Automated Cost Engineering System (TRACES). Another support system is the Historical Analysis Generator (HAG) for military construction cost data, which is a Tri-Service system and use to collect and report the military construction award cost data and is available to USACE divisions/districts for cost reference. A new system is ACF32 which is a new version of Tri-Service system which is used to develop and/or update DOD Area Cost Factors (ACF) for military construction. The team also support PC-COST which is a Microsoft Windows-based software tool for preparing and submitting programming or budgeting estimates for military projects. For Civil Works the team supports the Cost Engineering Dredge Estimating Programs (CEDEP), which provide a windows software for estimating dredging projects using mechanical, pipeline and hopper dredge plant that interfaces with MCACES.

The team developed parametric cost estimating models for use in Parametric Cost Estimating System (PACES) and Remedial Action Cost Engineering and Requirements System (RACER), which are systems, developed by the Air Force are used by the Corps and other Government Agencies for preparing budgetary cost estimates for MILCON and DERP projects. Parametric estimating allows district personnel to develop a fairly accurate project budget cost estimates (with little or no design information) that is supportable and defensible. Currently there are about 100 cost models for MILCON projects and about 60 cost models for environmental projects.

Technical guidance and technical data for maintenance and update of the Army's PAX DD1391/ENG3086 cost estimating modules in provided by this team. The technical data includes cost guide, ACF, inflation (MCP) indices, and exchange rates for the DD1391 Processor and PC-Cost Module. The Costs and Economics Team also is the proponent of Army economic analysis package, ECONPACK for Windows used by MACOM and installation DPW to perform the economic analysis in support of their MILCON projects. The Life Cycle Cost software module of TRACES (Tri Service Automation of Cost Engineering Systems) and the COST-RISK software interface of the Micro-Computer Aided Cost Estimating System (MCACES) were developed to ensure that USACE life cycle and cost risk analysis methodology is consistent with industry and governmental standards.

The Cost and Economics Team provides guidance and support to USACE PROSPECT training courses including Cost Estimating Basic, MCACES Basic, and MCACES Advance. It supports training for DD Form 1391 Preparation (Budget cost estimate related areas) and Information Systems Cost Estimating in Support of MILCON Projects. The members support workshops for various other automated systems used by the Tri-Services.

The team has developed a cost engineering web site that provides a single portal to the Tri-Service cost engineering communities for cost engineering policies, guidance, software programs, and construction data. The address of the site is http://www.hq.usace.army.mil/cemp/e/EC/ec_new.htm

Building Systems Team -- The Building Systems Team consists of 3 engineers (1 vacant) and 3 architects. The team leader is Joe Hartman. The primary areas of responsibility for this team are architectural and structural policy for MILCON and materials and structural steel policy for Civil Works. The team handles several significant program areas: Army Facilities Standardization, Earthquake Hazard Reduction, and Anti-terrorism/Force Protection.

Architectural responsibilities of the team include: MILCON programming (space allowances), facility layout and standardization, exterior design and finishes, interior design and finishes, and architectural technical requirements (doors, windows, hardware, etc.) USACE currently maintains standards for 22 facility types. The Building Systems Team coordinates the efforts of a wide range of Army customers to develop the requirements for quality designs, within DOD funding limits. These efforts result in facility standards, which may vary in level of detail, but all provide a set of standard space allowances and footprints, either for the entire facility or for facility modules. These standards are maintained and updated by districts assigned as Centers of Standardization for each facility type.

The Army barracks program is currently receiving special attention. Over the next several years, the Army has focused on providing improved barracks facilities as part of its quality-of-life initiatives. Barracks construction will receive the largest share of MCA funding. Following the Barracks improvement program, the Army has targeted Physical Fitness Facilities (PFC) and Trainee Barracks Complexes for modernization.

The Building Systems Team has also contributed to the development of Sustainable Design concepts. This covers a wide range of concepts intended to reduce life cycle costs and to make construction and maintenance of Army facilities more ecologically friendly. Our architects participate in conducting the training sessions now being provided at the districts.

Earthquake hazard reduction will be a major focus area over the next 30 years for all Federal agencies. The Building Systems Team provides the USACE representative to the Interagency Committee on Seismic Safety in Construction. The ICSSC, in cooperation with FEMA, has developed recommendations for long-term reductions in seismic risk for Federal buildings. These recommendations have been sent to OMB and will be forwarded to Congress. There is a parallel effort to reduce seismic risk for lifeline facilities, such as power generation and distribution, water supply, transportation, etc.

The Army has about 7,500 existing buildings, which are seismically deficient by today's design standards. The cost to upgrade these buildings is over \$4 billion. Similarly, there are 600 Civil Works buildings that will need to be upgraded, at a cost of \$300 million. The funding source for this effort is currently unresolved. The Building Systems Team is responsible for developing the specific USACE and Army engineering standards for seismic design, evaluation and upgrade of buildings.

Anti-terrorism/Force Protection is another hot issue these days. DOD has issued interim standards for construction of all new occupied buildings, and final standards are currently being prepared. The Building Systems Team and the USACE Protective Design Center at Omaha District are part of the DOD committee developing these standards. The standards require a combination of setback distances

from areas with vehicle access, or from the base perimeter, and building hardening to limit damage and especially to prevent progressive collapse. The Protective Design Center conducts frequent training sessions on threat evaluation and protective design. To help implement these requirements, we have published the TM 5-853 series. Over the next several years, updated DOD manuals will replace these manuals. The Protective Design Center is the primary contributor to manual development.

The Building Systems Team is also responsible for general structural design requirements for building components. Primarily, this consists of reliance on industry standards. However, when the Army has special needs, or has experienced repetitive problems, USACE publishes specific design requirements to meet the Army's needs. These requirements are contained in the TM 5-809 series and in the TI 809 series of publications.

On the Civil Works side, our team sets policy for design of heavy steel gates and for use of concrete materials. Design of steel gates is being transitioned from allowable stress design, toward load and resistance factor design. General LRFD requirements are identified in EM 1110-2-2105, while other EM's give specific requirements for each type of gate. There are also a variety of EM's, which provide criteria for design of mass or reinforced concrete structures, and for shotcrete, roller compacted concrete, and thermal analysis to minimize cracking of mass concrete structures.

Systems Engineering Team -- The Systems Engineering Team (CECW-EIS) is a team of 5 engineers led by Jerry Foster, P.E. Members include Charles Pearre, Jerry Steele, Paul Tan and Andy Wu. The team is responsible for three major programs: Dam Safety Program, Bridge Safety Program and Design Quality Management Program.

The USACE Dam Safety Program is responsible for over 500 dams owned and operated by the Corps, and oversees the federal Dam Safety Inventory of public and private dams under the National Dam Safety Act. The Chief, Engineering and Construction, CECW-E is the Corps Dam Safety Officer. CECW-EIS provides overall management of the USACE program and works closely with CECW-EW to prepare policy and guidance for the safety evaluation of dams. As members of several interagency committees (ICODS, NDSRB, USCOLD), CECW-EIS also is involved in establishing federal standards for dam safety. Assistance is provided in the development of dam safety technical policy for the ACSIM, Army MACOMS and Army installations on total program management, field programs, training coordination and public awareness. CECW-EIS is also the program monitor for the USACE Risk Analysis for Dam safety R&D program that is developing a risk analysis framework and tool box for making dam safety investment decisions.

The USACE Bridge Safety Program is responsible for compliance with the Surface Transportation Assistance Act of 1978 (PL 100-17), which requires that all structures defined as bridges on public roads be inventoried and inspected in accordance with the National Bridge Inspection Standards (NBIS). Under the Bridge Safety Program, all bridges owned or maintained by the USACE on civil works projects are inspected and inventoried to ensure their safety and structural integrity. CECW-EIS manages this program which includes an inventory of more than 200 bridges that meet the requirements of PL100 (public highway, railroad, foot/pedestrian, access bridges to outlet works and dam service bridges except pedestrian walkways or passageways which provide internal access in structures). The CECW-EIS PM is responsible for total program management including facilitation of field programs, training coordination, and public awareness programs. CECW-EIS also provides assistance and technical guidance through the Army Chief of Staff Installation Management (ACSIM)

to Army MACOMS, and Army installations on the Army Bridge Safety Program. USACE receives funds from the DOT appropriations to manage the program and inventory.

The other major program that CECW-EIS provides oversight, technical guidance and policy for is the Quality Management Program for design. CECW-EIS is responsible for the oversight of field QM practices, developing metrics for the measurement of the quality of in-house and AE designs, and the fields' implementation of QM policy. This also includes monitoring of PMBP practices to assure that QM is fully considered and integrated into all aspects of the design and construction process.

The expertise of the engineers in this team are utilized to support many other programs and efforts within E&C. They assist CECW-EI in management analysis for the USACE E&C workload and execution of this workload by providing input to the overall assessments of cost of doing business, AE contracting and construction cost & time growth. They also lend their technical expertise to the development of risk and reliability technical analysis policy and guidance for use in investment decision making for civil works projects in the Major Maintenance and Major Rehabilitation Programs.

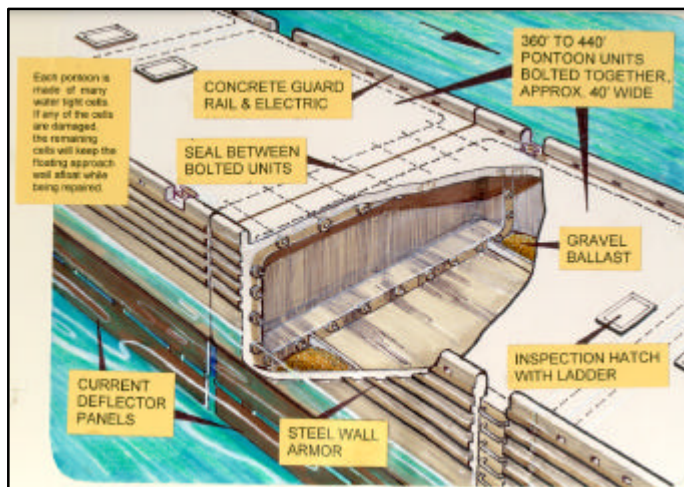
POC: ROY E. BRADEN, CECW-EI, 202-761-6933

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District of the Month

HUNTINGTON DISTRICT

The Huntington District employs 1000 people with 250 working in Engineering and Construction Division (EC). We have a large diverse civil works program with a FY 2001 operating budget of \$169 million. Of this, \$62 million is budgeted to operate and maintain our 44 flood-control dams and navigation projects.



This artist conception shows a cutaway of the section where the pontoons are bolted together. The floating concrete pontoons will be joined together to form four approach walls at the Greenup Locks and Dam on the Ohio River. The pontoons will be constructed in a decommissioned lock chamber at the Byrd Locks and Dam and floated downstream to Greenup Locks and Dam

Navigation construction projects nearing completion are Byrd Locks and Dam (\$379 M) on the Ohio River and Winfield Locks and Dam (\$227.5 M) on the Kanawha River. We are in final design for adding a new main lock chamber at Marmet Locks and Dam (\$313 M) on the Kanawha River beginning FY 2002. Upcoming projects under design include lengthening lock chambers at London Locks and Dam (\$22.2 M) on the Kanawha River and at Greenup Locks and Dam (\$205 M) on the Ohio River.

We will use an innovative approach at Greenup Locks and Dam to that reduces cost, construction time and impact to navigation. This will include use of pre-cast concrete units to extend the Greenup lock chamber by 600 feet. The pre-cast units will be made at the site with

concrete from an on-site batch plant. A floating crane will lift the pre-cast components into place in the wet with minimum impact to navigation. In addition, the Greenup expansion will include floating concrete lock approach walls. These walls will be made from concrete pontoons ranging in length from 250 feet to 440 feet. The pontoons will be constructed upstream in a decommissioned lock chamber at Byrd Locks and Dam. They will then be floated downstream to Greenup and configured into two 1,346-foot upstream walls and two downstream walls of 1,184 feet and 295 feet. Construction will start in 2006.

We also have an active flood-control construction program. The District is 65 percent complete in



This brick ranch home has been raised in place to a level one-foot above the 1977 flood of record. It is one of 600 homes that have been raised by the Huntington District in the Tug and Levisa Fork Basins in WV and KY.

constructing a 7.2-mile floodwall/levee (\$127.3 M) in Columbus, Ohio on the Scioto River. We are continuing a 20-year effort to bring flood reduction relief to Appalachia Mountain valleys on the Tug and Levisa Forks of the Big Sandy River located in West Virginia, Kentucky and Virginia. In response to this region's 1977 flood of record, Congress, in Section 202 of the Energy and Water Development Act of 1981 directed the Corps to use such measures as necessary to reduce flooding in these river basins. We have used structural and non-structural approaches for this program. To date, we've constructed four floodwalls, developed three relocation subdivisions, relocated and constructed five public schools, raised 600 homes above the 1977 flood plain and acquired about 600 more homes in the flood plain.

Construction is now starting on an innovative Section 202 flood-control project in Grundy, Va. (\$103.8 M). Grundy is squeezed into a narrow mountain valley along the Levisa Fork and has had nine major floods in the last 70 years. Our plan will provide a 13-acre site above the 1977 flood level to relocate the downtown business district. Most of the current business district will be taken by an upgrade of US 460 through the town. The highway construction, which initially planned to by-pass Grundy, takes most of the business district and provides a cost-share for the flood-control project. The cost share partners for the relocation site are the Virginia Department of Transportation and the Town of Grundy. An elevated US 460 will serve as a levee for a portion of the town and a floodwall along a tributary stream will tie to the highway. Houses and businesses in the 1977 flood plain and not protected by levee or floodwall will be raised in place to a level one-foot above the floodplain or acquired.

Huntington District has eight other Section 202 projects involving elevating or acquiring structures within the 1977 flood plain that will total \$361 million to complete.

We have completed three dam safety assurance projects. Four more dams (\$139.5 M) will be upgraded, and we are evaluating six more dams for upgrading as part of our dam safety assurance program. At Bluestone Dam on the New River near Hinton, WV, we are ready to begin the dam safety improvements that will include raising the dam 13 feet by installing a pre-cast concrete wall, stabilizing the dam with



An artist concept of a multi-level discharge tower that will be built on the face of the Bluestone Dam, located on the New River in WV. This modification will allow the dam to pass drift at high flow conditions.

anchors and mass concrete blocks, and modifying six existing penstocks to increase the discharge capacity. Concurrent with the dam safety assurance work, we will modify the dam with a multi-level structure connected to a release tunnel through the dam so that it will pass drift and debris during flood events. This is necessary because the dam was constructed for hydropower and flood control and lacked a way to pass drift and debris under high flow conditions, because hydropower wasn't developed.

We are fully involved with partnering with other government agencies and other districts to provide engineering that efficiently and economically meets customer needs and expectations. Though the work for others program, Huntington provides engineering and construction oversight capabilities to the National Forest Service, the National Park Service, National Aeronautical Space Administration, the U.S. Department of Energy, U.S. Environmental Protection Agency, the U.S. Bureau of Prisons, U.S. Housing and Urban Development, the U.S. Fish and Wildlife Service, U.S. Agency for International Development for Nicaragua, the Indiana Dept. of Natural Resources through the Detroit District and the City of Columbus, Ohio. This work will total \$30 million in FY2001.

Our Nicaraguan work is a partnership with the Nashville District through the Mobile District to provide technical assistance to Nicaragua to recover from Hurricane Mitch. We have a two-fold objective in our work in Nicaragua. We are working with their government agencies to help the recover from Hurricane Mitch, and we want to transfer knowledge and enhanced technical engineering and construction capabilities to the people we are working with. Examples of work being done include construction of a Bailey Bridge, building rural roads, and constructing health clinics. More technically challenging work includes development in hydrology, sedimentation, and basin studies.

Our District has incorporated the Baldrige Criteria in our business practices and has been an Army Chief of Staff Award quality award winner in 1997 and 1998. Huntington was a Presidential Quality Award Finalist in 1998 and qualified this year as being a top Army submission in the Presidential Quality Award. The Engineering and Construction Division is also pursuing ISO 9001 International Standard for Quality Management Systems certification. The EC Division formed a management team in September and we plan to be 9001.2000 registered by March 2002.

POC: AL BRANCH, CELRH-EC, 304-529-5254

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Reorganization News

E&C MOVE COMPLETED

The Engineering and Construction Division staff has completed its move to the Kingman Building. Minor construction items are still to be completed; however, the office is operational. The mailing address for the office at the Kingman Building is USA Corps of Engineers, ATTN: CECW-E, 7701 Telegraph Road, Alexandria, Virginia 22315-3802.

POC: CHARLES PEARRE, CECW-EIS, 202-761-4531

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Update

HYDROPOWER ANALYSIS CENTER ASSISTS CORPS OFFICES WITH HYDROPOWER PLANNING

Did you know that the Corps of Engineers is the largest single hydropower producer in the U.S., managing an \$18 billion investment in 75 power plants producing over 24% of all hydropower generated in the U.S.? Did you also know that the average age of the equipment in these power plants is about 35 years, which is also near the end of their design life? Although the equipment in many plants is starting to be replaced, these statistics point out the need to seriously consider equipment replacements at remaining plants. Operational changes affecting hydropower generation are also being considered at many projects in response to changing needs for the environment, water supply, navigation, and other considerations.

The Hydropower Analysis Center (HAC), located in the Northwestern Division Headquarters in Portland, Oregon, is a valuable resource for Corps staff needing assistance in all types of hydropower planning, analysis, and economics. This center was first established as a technical center in the 1950's as part of the planning and development of the Columbia River hydropower system. Since that time, well over 150 different hydropower studies have been completed on a wide range of projects located throughout the U.S., as well as in many foreign countries.

Examples of the types of services that can be provided by the HAC and recent studies performed for the Corps include:

River System Studies: Columbia River System Operation Review for Northwestern Division
Power Plant Major Rehabilitation: Webbers Falls for Tulsa, Barkley and Center Hill for Nashville
Cost Allocation and Water Supply Reallocation Studies: White River System for Little Rock
Hydropower Economic Benefit Assessments: Corps-wide Power Plant Seismic Risk Evaluation
Hydropower Training: HEC-5 and Power Plant Major Rehabilitation Workshops

Visit the website at <http://www.nwd-wc.usace.army.mil/PB/welcome.html> for more information on the HAC and the services available. Also, individuals can contact James Barton at (503) 808-3974. On evaluations involving hydroelectric equipment replacements and upgrades, the HAC works closely with the Hydroelectric Design Center, also located in Portland, Oregon. Their website can be found at <http://www.nwp.usace.army.mil/hdc/>, or contact Rick Goodell at (503) 808-4200.

POC: JAMES D. BARTON, CENWD-CM-WP-N, 503-808-3974

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WIND / TORNADO DAMAGE MITIGATION SYMPOSIUM

The Southwestern Division, U.S. Army Corps of Engineers in partnership with the Federal Emergency Management Agency (FEMA) is proud to announce that we are sponsoring a Wind / Tornado Damage Mitigation Symposium on 5 – 6 Dec. 2000 at the Radisson Plaza Hotel, 815 Main Street, Fort Worth, TX 76102.

We are very fortunate that we were able to obtain distinguished experts in several fields to participate in this symposium. The speaker list includes the following:

Dr. Ernst W. Kiesling P.E., Professor of Civil Engineering and Director of the Wind Engineering Research Center

Dr. H. Scott Norville, Professor of Civil Engineering and Director of the Glass Research and Testing Laboratory

Jeffrey D. Granato, Architectural Manager for DuPont Glass Laminating Products
Christopher C. Anderson, North American Product Specialist for DuPont Glass Laminating Products
Frank C. Dlubak, President and Owner of Dlubak Technologies Inc.
Alyssa Dlubak Bodiford, Owner of A. Dlubak Corporation
Dr. David A. Fanella, S.E., P.E., Manager, Buildings and Special Structures Department, Portland
Cement Association, Skokie, Illinois
David Shepherd, AIA, Program Manager for Residential Technology, Portland Cement Association
E. Scott Tezak, P.E., Project Manager, FEMA
Susan E Ballard, Director and Founder, Quality Housing and Community Living Division, Greenhorne
and O'Mara, Inc.
Randall Shackelford, P.E., Research Engineer, Simpson Strong-Tie Co., Inc.
Scott Plumlee, Sales Representative, Simpson Strong-Tie Co., Inc.

We are inviting all of the Army and Air Force bases and their commands that we support in the Southwestern Division; representatives from the Naval Facilities Command; FEMA HQ's and FEMA Region 6; USACE HQ's, districts and divisions. In addition we plan to share this technology (technology transfer) with the engineering staffs of the Metroplex cities, surrounding cities and school districts. We are also inviting the architects and engineers in the SWD area.

Corps of Engineers personnel interested in attending the symposium should contact the POC shown below.

POC: WALTER R. THIEM, R.A., CESWD-ETEC-T, 214-767-2355

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FEDERAL ENGINEER OF THE YEAR AWARD

The USACE is participating in the National Society of Professional Engineers (NSPE), 22nd Annual, Federal Engineer of the Year Award Program. The winner of this honor will be recognized in an NSPE award ceremony held during National Engineers' Week, 18-24 February 2001. The NSPE competition is open to all federal agencies employing at least 50 engineers worldwide. Nominations from all USACE districts, divisions, and separate field offices were solicited with 27 nominees received. These nominees were paneled at HQ and following are the winners (the best of the best) selected to represent the USACE in the final NSPE competition for the FEYA:

MAJ Darien Peter Helmlinger, P.E., Project Engineer, U.S. Army Corps of Engineers, Far East District, Tongduchon Resident Office, Camp Casey, Korea, and

Mr. Claude N. Strauser, P.E., Chief, Hydrologic and Hydraulics Branch, U.S. Army Corps of Engineers, St. Louis District.

MAJ Helmlinger is a 1988 graduate of the U.S. Military Academy at West Point receiving a Bachelor of Science Degree in Mechanical Engineering. In 1999 he received a Masters of Science Degree in Civil Engineering from Stanford University. MAJ Helmlinger is a member of the National Society of Professional Engineers, Society of American Military Engineers, and Army Engineer Association. He is the recipient of numerous prestigious awards including the Bronze deFleury Award, and active in numerous civic and humanitarian pursuits. He is currently serving at the Tongducheon Resident Office at Camp Casey, 18 miles south of the demilitarized zone in South Korea and managing a \$155 million construction program that replaces 350 Korean War era Quonset huts with modern facilities, following flood damages from Typhoon Olga in August 1998.

Mr. Claude N. Strauser is a graduate of the University of Missouri at Rolla. In 1969 he received his Bachelors of Science Degree in Civil Engineering, and in 1992 he received a Professional Degree in Civil Engineering. Mr. Strauser is a member of the National Society of Professional Engineers (past President, Rolla Chapter of the Missouri Society of Professional Engineers), the American Society of Civil Engineers, Society of American Military Engineers, and the Academy of Science of St. Louis. He is the recipient of numerous prestigious awards including the Chi Epsilon (May 2000, National Civil Engineering Honor Society Member), Chief of Engineers Design and Environmental Award (2000 and 1998), Hammer Award (1997), U.S Army Corps of Engineers Civilian of the Year Award (1997), and the Presidential Award for Design Excellence (1994). Mr. Strauser is active in numerous civic and humanitarian pursuits. He is currently serving as the Chief, Hydrologic and Hydraulics Branch, at the St. Louis District. Over the last three decades Mr. Strauser has been instrumental in leading a team of engineers and scientist in river restoration measures that are focused on maintaining a safe and dependable navigation channel in an environmentally acceptable manner. Mr. Strauser has published 19 professional papers in river restoration measures and is a sought after lecturer in this field.

POC: BRUCE R. WALLACE, CECW-ETV, 703-428-7335

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INNOVATIVE TECHNOLOGIES STAYS AFLOAT FORMER CREOSOTE SITE PROVIDES UNIQUE CHALLENGE

On a cool morning in July, Steve Brewer of SWT and Karl Konechy of WES may have been wondering if it wasn't too late to turn back as the Tulsa District's 20-ton SCAPS rig was hoisted on top of a spud barge docked at Mare Island just east of San Francisco, CA. It is almost a sure bet that the designers of the truck had not imagined that for the next twelve hours, a small tug would escort the barge and its cargo through the calm channel waters to the Port of Stockton.



A First -- The United States Army Corps of Engineers (USACE), Seattle District requested the assistance of the Tulsa District (SWT) and Waterways Experimental Station (WES) in conducting site characterization activities at the McCormick & Baxter Superfund Site located in Stockton, California. The site occupies approximately 32 acres in a predominantly industrial area near the Port of Stockton. It is the first time that one of the three US Army Corps operated SCAPS units has been secured to a barge in order to characterize the underlying soils in a slough, which lies adjacent to the former creosote site.

SCAPS -- The Site Characterization Analysis and Penetrometer System (SCAPS) blends cone penetrometer (CPT) and laser induced fluorescence (LIF) technologies that are operated simultaneously from a support platform. The support platform is a 20-ton diesel powered truck. The dimensions of the truck require minimum access width of 10 feet and a height clearance of 16 feet. The CPT sensor uses standard cone penetrometer techniques to identify changes in the subsurface that helps provide a better understanding as to site geology. The LIF sensor is used to detect petroleum, oil and lubricant (POL) type compounds.

Spud Barge -- In order to accomplish the slough investigation, the SCAPS unit was positioned and secured on top of a spud barge. The spud barge is 110 feet in length, 34 feet wide and 12 feet from top of the deck to the base of the keel. Two spuds are operated on opposite ends of the barge and are used to stabilize the barge once it is in position. Each spud is a steel column approximately 80 feet tall and 2.5-feet in diameter. Once in place, the spuds are released and gravity driven into the underlying sediments to minimize any horizontal movement of the barge. Once all on-board investigative activities have been completed at a given location, the spuds and anchors are mechanically lifted, and a small tug is used to reposition the barge at the next location.



Moonpool -- Deck activities on the barge centered on the SCAPS and the moon pool. The moonpool is an opening, which runs from the surface of the deck through the keel. Prior to arrival at the slough, the contractor reduced the barge's 36-inch diameter moonpool to 6-inch. The SCAPS was positioned and secured over the moonpool with the use of a large dockside crane. Once the barge and SCAPS were positioned over the location to be profiled, the truck was leveled up over the 6-inch pipe. In order to reduce the diameter of the moonpool even more, two-foot lengths of 3-inch diameter $\frac{1}{2}$ inch thick steel casing was hand threaded through the moonpool to the floor of the slough. The SCAPS's hydraulics were used to push the casing into the floor of the slough until approximately 5000 lbs. of resistance was achieved. Two to 2 $\frac{1}{2}$ foot lengths of schedule 40 2inch diameter PVC was then hand threaded inside the steel casing. The ultimate diameter goal was sized to give lateral strength between the keel and slough floor, while keeping the diameter as small as possible to prevent the rods from bending inside the casing. The PVC pipe was also used to prevent "metal to metal" grinding between the pushrods and casing as the probe was being advanced and retracted.

Pushing -- Once the casing had been set into the floor of the slough, the SCAPS was hydraulically lowered as close to the deck as possible to minimize bending of the pushpipe between the deck and the truck. Elevation coordinates were shot on the deck. Variations in push depth due to tidal influences were corrected for with the SCAPS computer software. The LIF/CPT sensor was then lowered through the reduced pipe and into the underlying sediments to collect the data and provide real-time results. After push completion, grout volume was calculated and the hole was grouted during retraction. Both the PVC pipe and the steel casing had to be removed prior to moving to the next location.

Summary -- Exploration of the slough was conducted from July 7 to July 20, 2000. Thirty-four LIF/CPT penetrations were pushed in the slough channel to various depths with the maximum depth being at 105 feet bags. Thirteen confirmation samples were also collected from three of these locations using a split-spoon sampler. These samples were analyzed on-site by conventional analytical techniques.

As compared with conventional drilling methods and off-site sample analysis, use of the SCAPS to conduct this investigation yielded significant cost savings of more than 75%, while providing real-time data as to contaminant migration with respect to lithology. Some of the advantages with using this technology include: immediate results which allow quick field decisions and reduce amount of downtime, data being collected in-situ which reduces worker exposure to hazardous chemicals,

minimal investigative derived waste, and a significant reduction in the amount of off-site laboratory analysis.

**POC'S: STEVE BREWER, CESWT-EC-EE, 918-605-9342,
AND CHRIS KENNEDY, CESWT-EC-EE, 918-669-7072**

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CONSTRUCTION MANAGEMENT IN EXCELLENCE AND HARD HAT OF THE YEAR AWARDS

In reference to the article with the same title in the October issue of the E&C News, the correct title of the award is "Construction Management Excellence Award."

POC: BRADLEY JAMES, CECW-ETC, 202-761-1419

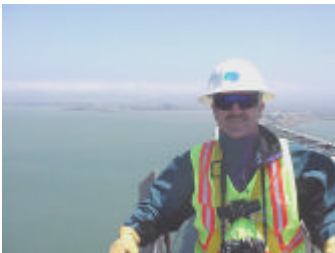
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SAN FRANCISCO-OAKLAND BAY BRIDGE

For over 225 years the U.S. Army Corps of Engineers has served as the nation's engineer. It has served the American people in all of their military campaigns. It has helped them through natural disasters. It has built and maintained their waterways, ports, and flood control projects. It has provided the engineering and technical expertise to help them develop and protect their natural resources.

Most recently, the Army Corps of Engineers was called on to bring its experience and trusted analysis to help the California Department of Transportation (Caltrans) and the City of San Francisco evaluate proposed alternatives to improve the seismic safety of the east span of the San Francisco-Oakland Bay Bridge. The City preferred a plan to retrofit the existing bridge as opposed to the replacement span proposed by Caltrans.

The Federal Highway Administration, Caltrans and the City of San Francisco, working through the White House's National Economic Council, asked the Army Corps of Engineers to serve as independent experts to evaluate key technical decisions made by Caltrans on the seismic retrofit of the existing east span of the bridge and the alternative plan to construct a replacement span.



"We had 16 weeks to assemble a team of experts, gather and review the data, and prepare our report," said Colonel Michael Walsh, district engineer for the Corps of Engineer' Sacramento District. "We assembled a team of 20 engineers and technical experts from across the Corps. They came from the St. Paul, St. Louis, Philadelphia, Louisville, Tulsa, and Sacramento Districts, and the South Pacific Division office. Three architect-engineer firms also helped the Corps with the analysis. They

were HDR, Inc.; Quest Structures; and GEI Consultants, Inc."

Working under contract to Caltrans, the team evaluated technical assumptions, engineering analyses, seismic safety, and cost estimates that were contained in the existing data. Under the terms of the agreement, they did not generate any new data or conduct additional analyses.

That data analyzed by the Corps of Engineers included a variety of reports and technical analyses developed by Caltrans and the City of San Francisco. "We looked at structural, seismic, geotechnical, and cost engineering reports," said Rick Poeppelman, a structural engineering team member from the Sacramento District. "Specifically, we reviewed the technical feasibility of the retrofit design proposed by Caltrans, the decision to select a replacement bridge and not retrofit the existing bridge, and the design of the proposed self-anchored suspension span," he said.

The existing east span of the bridge was completed in 1936. It extends from Oakland about 12,000 feet to Yerba Buena Island. It's a double deck roadway primarily supported by a steel truss superstructure.

"We had concerns over Caltrans' retrofit approach regarding their use of an isolation strategy," said Jerry Gianelli, project manager for the review team. "There was no supporting documentation on why a flexible structure such as the east span with low seismic force demands should be stiffened by concrete encasement and then softened back to its original condition using isolation bearings," Gianelli added. "In addition, none of the data provided us for analysis demonstrated that any retrofit alternative was analyzed that could meet the required level of earthquake safety needed for the bridge."

The replacement bridge proposed by Caltrans consists of four different bridge types. These include a post-tensioned concrete span at the Oakland touchdown, a 1.5 mile concrete skyway structure, an asymmetrical self-anchored suspension main span supported by a single tower, and a post-tensioned concrete box-girder span to the Yerba Buena Tunnel. The Corps review focused on the self-anchored suspension bridge (SAS) and the skyway structure.

The spans of the Self-Anchored Suspension Bridge are asymmetric with a 590-foot span west of the main tower and a 1260-foot span east of the tower. The main tower principally carries the weight of the suspension bridge. Connected at the top of the tower, the main cable is anchored at each end directly into the superstructure. This places the steel box girder superstructure in compression. Suspenders connected to the main cable support the bridge deck.

"We addressed the seismic safety of the replacement bridge in terms of its predicted performance during an earthquake," Gianelli said. "Because the design of the Self-Anchored Suspension span is not complete, we were unable to determine if it will meet the required earthquake safety standards," he added. "However, our review of the available data does show that Caltrans is moving along a design path to meet the seismic performance criteria established by the bridge's Seismic Advisory Board and the Engineering Design Advisory Panel."

"After 4 months of analyzing nearly 400 documents containing 75,000 pages, it is our opinion that a replacement bridge is preferable to a retrofit of the East Span of the San Francisco-Oakland Bay Bridge," said Colonel Walsh. "A replacement alternative is the path that most quickly resolves the exposure of the public to the seismic vulnerabilities of the existing structure," Walsh added. "This was a challenging and professionally rewarding effort," Walsh said. "In the end, we're confident that our work will help Caltrans provide the people of the San Francisco Bay Area with a safe bridge."

POC: CARL VANDAM, CESPK-ED-E, 916-557-6604

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ENGINEERS AND SCIENTISTS FROM GERMANY VISIT CEMVD

The first week of October 2000 a group of eleven engineers and scientists from Germany toured the Corps' Mississippi Valley Division to observe portions of the flood protection system on the Mississippi River and its tributaries. The group included participants from the Institute of Soil and Rock Mechanics at the University of Karlsruhe, State Office of the Environment (Krefeld), Ministry of the Environment (Dusseldorf), and a consulting engineer.

The tour included visits to St. Louis District's Mel Price Lock and Dam and Micro Model, Memphis District's W. G. Huxtable Pumping Plant, Vicksburg District's Blakely Mountain Dam, New Orleans District's Old River Complex, the Engineering Research and Development Center and the MVD/MRC offices in Vicksburg, as well as sight-seeing in St. Louis, MO, Hot Springs, AR, Vicksburg and Natchez, MS, and New Orleans, LA.

Information exchange included presentations by Corps representatives on the projects visited as well as such topics as the Mississippi River and Tributaries system, MR&T Levees, Dam Safety, Instrumentation, the Civil Works Budget Process, Environmental issues, and Emergency Management. Our guests also made several very interesting presentations on their flood protection systems associated with the Rhine River in Germany. The visit was beneficial to both our guests and those who participated from the Mississippi Valley Division while fostering the transfer of technology and promoting constructive relations with the German Government and the University of Karlsruhe.

POC: TONY YOUNG, CEMVD-ET-EG, 601-634-5896

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Dam Safety

DAM SAFETY PROFESSIONALISM

There has been a lot of Corps bashing the past several months. This criticism is somewhat discouraging to me and to many other Corps employees. So I want to make a few remarks about two different but very closely related programs, the Dam Safety and Periodic Inspection Programs, both of which, I believe, benefit this country as much as anything our government does and are much more beneficial than the things many of our critics do.

My involvement with the Dam Safety and Periodic Inspection Programs spans about 30 years. So I have a very definite and extremely well founded appreciation for these programs.

The payback from these programs is large and includes Dam Safety Assurance work at dams such as Baldhill, Orwell, Pine River, Homme, and Sardis; Major Rehabilitation at many locks and dams in the Rock Island District and at Lock and Dam Nos. 24 and 25 in St. Louis District; and major and/or critical maintenance work at projects such as Mel Price Lock and Dam, Jonesville and Columbia Locks and Dams, Red Rock Dam, Grenada Dam, Red River Waterway Lock and Dam No. 3, Caddo Dam, Catahoula Lake Control Structure, Yazoo City Pumping Station, and presently at Rend Lake, Lock and Dam No. 13, Sardis Dam, and Arkabutla Dam, just to name a few.

For example, a scour hole was found during a periodic inspection at Mel Price Lock and Dam and subsequently repaired in an expeditious manner as it was within about 50 feet of the concrete dam, extending below the base of the concrete and within ten feet of the tip of the sheet piling. This situation could have been catastrophic if it hadn't been for the Periodic Inspection that was conducted. Mel Price Lock and Dam is a billion-dollar project. The value of the projects in these programs within MVD is in the tens of billions of dollars not including the people and property that they protect.

The cost of the Dam Safety and Periodic Inspection Programs in MVD is analogous to spending less than \$50 per year to insure a \$100,000 house. You can't buy homeowners' insurance for that price from anyone. It's just not available. Yet the Dam Safety and Periodic Inspection Programs have been continually evaluated to reduce costs and have been cut to the bone. There are even very poor

countries that do more than we now do in inspecting their dams. I went to Vietnam on a Corps mission last year with three other MVD engineers. Vietnamese make, on the average, about \$300 a year, a dollar a day. Yet the dams we visited are inspected and reports prepared every year. Other work, such as collecting and evaluating instrumentation data, is accomplished between these annual inspections. I don't believe our projects are being endangered, but we are doing the absolute minimum, and it is a constant battle to continue doing as much as we do.

We are continuing to lose our institutional knowledge and technical expertise. Those of you who are Dam Safety Officers need to be thinking about who will continue to protect you when the people you have now are gone.

In spite of all the Corps bashing, I'm proud of what the Corps has done and of the projects we've built. Dams have provided water for people for literally thousands of years. According to the International Commission on Large Dams, there are 1.5 billion people in the world who still don't have a reliable source of suitable drinking water, and more than a billion people are either malnourished or starving. Over two dozen countries don't have enough water to properly sustain their populations. I believe these countries would give nearly anything to have the dams the Corps of Engineers has constructed.

We should be proud of our projects, and it's our job to see that these projects remain safe. That's what these programs are about, and that is what we are doing here today.

POC: TONY YOUNG, CEMVD-ET-EG, 601-634-5896

(Editor's Note: The above article was presented to the Mississippi Valley Division Dam Safety Officers Meeting in St. Louis on 14 November 2000. It emphasizes the importance of the Corps' reputation in dam safety and dam engineering to the nation and to the world.)

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INSPECTION, INTERPRETATION AND FOLLOW-UP

The National Dam Safety Program Technical Workshop No .8 - "Inspection, Interpretation and Follow-up" has been scheduled for February 21-23, 2001. It is the 8th workshop in a very successful and highly acclaimed series of technical dam safety training sessions, sponsored by the Interagency Committee on Dams, the National Dam Safety Program and developed through the cooperation of the Federal dam safety agencies and the Association of State Dam Safety Officials.

The workshop will examine the inspection, evaluation and appropriate follow-up actions that should be taken based on the results of the inspections for all types of dams. Since the inspection topic encompasses the most basic component for most dam safety programs, the workshop should be a significant interest to State and Federal dam safety engineers and officials, private engineering consultants, and dam owners. The workshop will feature:

- Recognized experts from private industry, the Corps of Engineers, the Bureau of Reclamation and State Dam safety programs providing insight into how observed deficiencies could effect the integrity of a dam, the seriousness of the deficiencies and the level and urgency of follow-up action.
- Dealing with the more problematic observations such as seepage, failure mode analyses, and the decision on when to monitor and when to act.

-
- Presentations on innovative and specialized inspection methods and equipment.
 - Technical and strategic aspects of implementing the dam inspection follow-up actions.

The workshop is being developed to pick up where the more basic inspection training, such as Reclamation's SEED course leaves off, and provide a higher more advanced level of technical information.

The Seminar will be held at FEMA's National Emergency Training Center (NETC) in Emmitsburg, Maryland, on February 21 - 23, 2001. The sessions will begin at 8:00 a.m. and will conclude at 5:30 p.m. on Days 1 and 2, and at 10:30 AM on Day 3.

To register for the seminar, individuals need to complete the General Admissions Application Short form (75-5a) and return it to the NETC no later than January 22, 2001 (**in block 9(a) - Course Code, write E-274**). The registration form may be faxed to 301-447-1658 or mailed to National Emergency Training Center, Admissions Office, 16825 South Seton Avenue, Emmitsburg, Maryland 21727. The form and additional information about the seminar are available at <http://www.fema.gov/emi/dsts.htm>.

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Information

ISSUES MANAGEMENT

The following article is a reprint from "Reputation Management", September/October 1996. It illustrates some the steps that we can take to improve the media image of the Corps. The article is included for your information and future reference.

"Organizations that learn to anticipate issues, understand the way in which they can evolve into full-blown crises, and then do something to prevent such crises can save themselves a lot of headaches. It sounds simple, but few organizations do it well."

"Anyone who was surprised when the use of sweatshop labor at home and abroad to manufacture brand-name goods for American manufacturers and retailers suddenly made front page headlines earlier this year - and that includes those companies who had no defense when those charges were leveled - obviously had not been paying attention."

"Like most corporate crises, the sweatshop and child labor issue did not come out of left field. For more than a decade, U.S. labor organizations and human rights groups have been attempting to excite politicians, the media, and ultimately consumers about the plight of the mostly foreign or immigrant workers - including children - who labor in sweatshops on behalf of U.S. companies. Their successes were sporadic, and perhaps this was what convinced the companies involved that the issue would eventually go away."

"But interest had been rising in recent years. Robert Reich, the first Democratic Secretary of Labor in more than a decade, was intent on leading a crackdown on domestic sweatshops, and "60 Minutes" had run a couple of segments with a sweatshop theme. The issue had come to a boil in some neighboring countries, most notably Canada. It might have been surprising that the involvement of a minor

celebrity was the catalyst that turned the issue into a full-blown crisis, but it should not have been surprising that something did. And when it did, it became apparent that most of the companies involved had not learned even the most basic lessons of issue management."

"Issues management, according to George McGrath, partner at New York's Osgood O'Donnell & Walsh, is a bridge between strategic planning and communications planning, a process that examines emerging issues, trends, and attitudes that can affect the bottom line."

"Most of us handle issues instinctively, almost accidentally. Or we wait until they become crises. Issues management is driven by anticipation," says Kerry Tucker, president of San Diego public affairs and issue management firm Nuffer Smith Tucker. "The key is to get involved with issues as they begin surfacing, ideally before all of the players have formally staked out a position. The earlier you're involved, the more options you have. It's best to get involved before an issue becomes fodder for discussion by regulatory or legislative bodies, and before it becomes a major media story."

"Typically, issues are regarded as going through four distinct stages. In the earliest, "origin" stage, an issue may exist only as part of a broader emerging trend, often identified or articulated in the writings of academicians or think-tank intellectuals who become concerned with some problem they believe has gone unnoticed by society as a whole. As awareness of the issue increases, it becomes defined, and enters a second stage of "mediation and amplification," during which various constituencies attach them to competing positions. This creates conflict, and the issue finds its way into the news media. Eventually, the issue reaches a third stage, "organization," in which clearly identified competing groups seek resolution, forcing the issue into the public policy process, where a legislative solution is sought. That leads to the fourth stage, "resolution."

"More recently, it has been suggested that the public has its own issue-attention cycle, which takes an issue through five stages: the pre-problem stage; alarmed discovery and euphoric enthusiasm; realization of the cost of significant progress; gradual decline in public interest; and finally, thankfully, a post-problem stage. The issue-attention cycle, however, generally only applies if a crisis meets a certain set of criteria."

"From a communications standpoint, it is clearly beneficial to intercept an issue in the earliest stages. This requires a highly sophisticated issues-monitoring program and some good fortune, but it allows an organization the opportunity to shape the issue. Don Ferguson, a consultant with the New York strategic communications firm of Geduldig & Ferguson, says the main advantage of getting involved at this early stage is the ability to put a name on the issue. "If you name it, you own it," he says."

"There are some prime examples of this in today's issues environment. Mad cow disease, for example, is a highly emotive name, one that farmers would surely have avoided if they could. Similarly, the anti-choice side in the abortion debate was extremely clever in persuading the media that it was, in fact, "pro life," even though most of those on the opposite side of the issue would argue that they believe in life just as vehemently as their foes. Corporate interests, meanwhile, have been astute in their labeling of unproven scientific theories as "junk science," a term, opponents have tried to apply to corporate-sponsored research."

"Even in the mediation and amplification stage, it is possible for a company to get ahead of an issue. Levi Strauss & Co. demonstrated this when, in the early '90s, it put in place a sourcing program that reduced the threat of its image being damaged by its choice of suppliers. H.J. Heinz waited until even

later in the game before announcing that it would voluntarily desist from buying tuna that had been caught in a manner that threatened dolphins, but it still received the full public relations - and sales - benefit of being seen as a leader on the issue."

"Clearly, however, companies that wait until an issue is already on the front page of their local newspaper and on the floor of House are going to have considerably less success in controlling its outcome. This is true of the sweatshop issue, and it is also true, on a much larger scale, of the way in which American business has responded to growing concerns about the environment."

"Environmental awareness has been on a 100-year rise," McGrath says. "The conservation movement of the 19th century led to the creation of the national park system and the development of reforestation programs. In the '40s and '50s, concern over air and water quality and chemical releases into the environment rose. In 1962, the release of Rachel Carson's *Silent Spring* brought the environment to the fore. The formation of Greenpeace, the creation of Earth Day, and recycling laws for average citizens are further examples of the trend in more recent years."

"All of these have created tremendous benefits for society and the environment. But the development of environmental protection in the United States would have been quite different if business had identified the issue as critical early on. Business could have been involved in cooperative discussions with concerned citizens, scientists, and government leaders, and achieved consensus on protections that needed to be installed. Had business become involved, it would have reached a better outcome than the current inflexible command-and-control system that subjects it to overwhelming legislation, regulation, and litigation. It might have ended up with flexible, market-based approaches to pollution control 30 years before the current debate. Business might have been praised for spending billions of dollars over the last 25 years for environmental protection, rather than being typecast as the evil, compliance-defying monolith. The opportunity existed to get involved early on and to play a constructive role in shaping public debate and solutions, but the opportunity was sorely missed."

"The process for establishing an issues management program has changed remarkably little since the discipline was first formalized by veteran public relations practitioner Howard Chase three decades ago, even though technology has simplified several elements. The first step is the creation of an issues identification system. Ideally, the system is administered by an internal cross-departmental task force that tracks not only traditional media sources but also the Internet and even feedback from customers gathered by marketing and sales staffs."

"Commercial online databases and information services provide instant access to volumes of archived information from news, business and government sources. Some, such as Lexis-Nexis, DataTimes, and Dialog, allow users to search through newspaper, magazine, and trade journal archives as well as data archives maintained by professional associations, special interest groups, and governmental bodies. Others, such as EEI-Online and NAMnet, provide users with daily, industry-specific updates and special reports. And others also provide users with access to the "real time" feed of most major news and business wire services around the globe."

"All this technology needs to be supplemented by good instincts and creative thinking, however. "Companies try to identify issues in two ways," says Bill Johnston, managing director of Burson-Marsteller, the international public relations firm, in Washington, D.C. "Some build elaborate tracking systems, but it always seems to happen that the issues they are tracking are not the ones that really end

up hurting the company. Others undertake a systematic analysis of their vulnerabilities on a regular basis and build their issues management effort around the areas of greatest vulnerability."

"When researching issues, it is important to select from 40 or 50 possible issues those four or five that will make a noticeable difference in a company's ability to achieve its objectives," says McGrath. "Issues management helps focus priorities for communications activities, maximizes resources, and links communicators to the business objectives of the company. Most important, it provides an opportunity for the company to get involved and shape the consensus on what should be done about an issue before battle lines are drawn - an opportunity that business cannot afford to miss again."

"Says Ferguson, "There's a tendency among the kind of people who get involved in issues management to think very long term, when what management really cares about is what is impacting the business today. There's not a lot of value tracking issues that might have an impact 10 years down the line if you're ignoring things that are having an impact today. I have seen incredibly sophisticated issues-identification systems dismantled because the people staffing them didn't really understand management's priorities."

"Once issues are identified, those of primary importance are subject to further research to understand their social, economic, and political implications. Next, decisions are made on the organization's response to the challenges or opportunities posed by the issue, in effect deciding how the issue can be managed in such a way that it helps the organization achieve its long-term goals. Chase suggested that most approaches fit into one of three categories: reactive (stonewalling, inaction), adaptive (openness or accommodation to change), or dynamic (anticipation of the issue and an active attempt to shape it)."

"Tucker recommends establishing priorities, determining which issues have the potential to impact the continuing operations of the organization, and then producing an assessment of which stakeholder groups are likely to be affected by the issue, their perceptions, their position - or potential position - on the issue, and their behavioral inclinations. That analysis can then be used to guide the organization to the best position on an issue. "The ideal position," he says, "is mutually beneficial to the organization, the affected publics, and the greater public good."

"At this point, resources are dedicated to addressing the issue, tactics are planned, and the desired messages are delivered. The final step in the process is the evaluation of results."

"New technology is impacting the practice of issue management at almost every phase. Washington public affairs firm APCO Associates, for example, has a system called IssueNet which gathers and analyzes data on selected issues and can even help organizations create an action plan to deal with them. Says agency manager Evan Kraus; "The first phase of the operation is the collection of data, which comes from newspapers, television stations, even the Internet." The company searches newspaper databases and the Internet for key words and phrases, and uses an outside service to monitor the 75 largest television markets."

"The next step is to process the data," Kraus says. "The information is categorized by relevance and by whether it is pro, anti, or neutral. We can then correlate the information by Nielsen demographic data, by voting information, to figure out who has been reached by a particular campaign. We can then use that data to answer questions like how much are our opponents spending on television ads and in what markets, which publications or individual authors are most likely to be supportive on an issue. Finally, we can link this information with our clients' own databases of constituents or campaign contributors

who are likely to be helpful on an issue and get them involved in the communities where some negative publicity might have appeared."

"The "mad cow disease" scare that swept the United Kingdom earlier this year was another utterly predictable example of an issue that had been on an industry radar screen for a considerable time suddenly becoming a full-blown crisis, says Kerry Tucker."

"Tucker's firm tracks issues likely to impact the food and agriculture industries and says the "mad cow" issue tapped into the consumer's psyche on a variety of levels: fear of the unknown; propaganda about the harmful effect of technology in modern agriculture; food safety concerns in general, including food-borne illnesses; the concern that new diseases are being discovered faster than science can find cures for them. It also demonstrated how an issue that might previously have been contained a single country can become a major global headache."

"The U.S. industry was in a reactionary position when an animal rights activist called on the FDA to active a still-to-be-implemented rule, proposed two years earlier, to ban sheep and goat offal as a protein source for cattle feed," Tucker says. "It was in a reactionary position when the Centers for Disease Control stepped up its surveillance of the incidence of the new strain of Creutzfeldt-Jacob disease as part of a pilot program in four states. And it was in a reactionary position when it announced a voluntary ban on using ruminant-derived nutrient supplements in cattle feed."

"Has the industry dodged a bullet? On the surface, yes. There were no significant consequences for short-term beef consumption. But with human lives at stake in England and the inability of scientists to satisfy public inquiry, it would take only one case in the U.S. to bring the domestic industry to its knees." For this reason, Tucker says, the industry is currently working on a system to effectively implement preventive action."

"One reason companies do not intercept issues before they become crises is simple denial. Psychologists say that man goes through seven distinct stages in reaction to crisis, from anger to denial and ultimately acceptance. Companies, for whatever reason, seem to get stuck at denial."

"I can understand the denial," says Burson-Marsteller's Johnston. "Everyone has some crisis that seems more real and more urgent."

"One of the things that many issues management programs miss is that this is a terrific way to identify opportunities as well as threats," says consultant Ferguson. "Many issues are potential sources of new business. If you can bring a new business opportunity to the company, something with a measurable dollar value, that can do more to solidify the importance of issues management in a CEO's mind than all the crises you've averted."

POC: CHARLES M. PEARRE, CECW-EIS, 703-428-7343

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JOB VACANCIES

Six vacancies are highlighted here for the information of our readers.

HYDROLOGIC ENGINEERING CENTER VACANCIES -- The Hydrologic Engineering Center, located in Davis, CA, is recruiting to fill four vacancies. Two positions are for entry through journeyman-level

hydraulic engineers (GS-9/12), and two are for senior-level hydraulic engineers (GS-13). Brief descriptions of the positions are as follows.

Hydraulic Engineer GS-9/12: This vacancy is in the Hydrology and Hydraulics Technology Division and supports field applications and software development in the technical subject of river hydraulics. Typical duties might include: application of HEC software to a field problem of computing flood profiles, estimating sediment transport, or unsteady flow hydraulics in a river system, or considering water quality aspects of river hydraulics; lecturing in courses and assisting with workshops; participating in software development by investigating new algorithms, formulating computation routines, and testing code by application of test data sets; and assisting senior engineers in precedent setting studies.

Hydraulic Engineer GS9/12: This vacancy is in the Water Resource Systems Division and supports investigations and software development work in the area of riverine and wetlands ecosystem restoration. Typical duties might include performing hydrologic engineering support to investigations involving restoration of degraded river reaches, improving wetland and riparian habitats, and developing more natural flow regimes for downstream reaches inhabited by endangered species. On the technical methods development side, duties might include application of GIS technology to these studies, assisting senior engineers in improving hydrologic engineering software to better address ecosystem restoration, and preparing reports and guidance for field application.

Hydraulic Engineer GS-13: This vacancy is in the Hydrology and Hydraulics Technology Division and leads activities in the area of hydrologic engineering investigations of particularly difficult circumstances or involving precedent setting methods development or applications. Typical duties might include developing engineer guidance on application of new hydrologic engineering methods to field problems, performing hydrologic dam safety studies to demonstrate applications of new methods, formulating new model algorithms for upcoming versions of the HEC-HMS watershed model, leading the Corps hydrology committee activities, and representing the Corps on national and interagency technical committees. Practical field experience is a priority for this position.

Hydraulic Engineer GS-13: This vacancy is in the Water Resources Systems Division and leads Center activities in the technical area of reservoir analysis, to include field applications and software development. Typical duties might include: developing reservoir systems models using the new HEC-ResSim as case examples; formulating a research and development plan to improve reservoir analysis in the Corps; develop requirements specifications for improvements to ResSim and other reservoir programs; formulating new training courses and packages; write users manuals and Corps guidance documents for reservoir applications; and serve on Corps and interagency groups concerned with reservoir operation issues. Practical field experience is a priority for this position.

These positions will be filled through the Western Civilian Personnel Operations Center (WCPOC) located in Ft. Huachuca, AZ. You may submit a resume via Resumix by following the instructions at <http://www.wcpoc.army.mil>. You may alternatively apply via the Delegated Examination Unit (DEU) procedure, also available at the above Web site. For administrative information and assistance, contact Diane Cuming at HEC. For technical and other job related information, contact the Darryl Davis, Director, HEC or Arlen Feldman, Hydrology and Hydraulics Division Chief, or Mike Burnham, Water Resource Systems Division Chief. See the Web site at <http://www.hec.usace.army.mil> for information about HEC.

The Albuquerque District is currently recruiting for a Civil Engineering Technician in their Construction Contracts Section, Albuquerque, New Mexico. Your assistance is requested to insure maximum distribution of this vacancy to your staff who may be interested in these opportunities. The duties for the position includes developing estimates and/or scope in the negotiations of modifications; examining differences and explaining basis for Government estimates; analyzing critical path networks in relation to construction changes and phased construction revisions; working with contract claims to assist the Contracting Officer's decisions; preparing draft findings-of-fact for claims; and other duties in contract administration. Information on applying for this position is available on the West CPOC web page at <http://www.wcpoc.army.mil>.

The Seattle District is recruiting for temporary Interdisciplinary, GS-13 (Temporary Promotional Opportunity - NTE 1 year) (General Engineer, GS-801; Economist, GS-110; or Physical Scientist, GS-1301) in their Environmental Management Branch with duty station at the U.S. Environmental Protection Agency, Region 10 Office of Environmental Clean-up, Brownfields Team, Seattle, WA. The individual will be the on-site Corps of Engineers (COE) representative in the EPA Regional Office Brownfields Team for overall coordination between the EPA Region 10 Brownfields Team and COE District/Division and advises the Region 10 Brownfields Team of COE support available. Duties are focused on the implementation of the overall EPA Regional Brownfields Initiative. Corps of Engineers support to EPA may include a wide range of activities, such as interacting with communities on Brownfields redevelopment projects, planning activities, civil-works cost-shared projects and providing sampling and analysis support. The individual should possess a strong understanding of the Corps planning program and other support the Corps or other federal agencies could provide. For additional information on applying for this position contact Susan Smith-Anderson (206) 764-3738 or email susan.l.smith-anderson@usace.army.mil.

*POC's: DARRYL DAVIS, CEIWR-HEC, 530-756-1104,
GARY GAMEL, CESPA-EC, 505-342-3434,
AND BRIAN APPLEBURY, CENWS-EC, 206-764-3432*

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ACASS/CCASS QUESTIONNAIRE

The Portland District has developed an Internet-based questionnaire to get user feedback on the Architect-Engineer Contract Administration System (ACASS) and the Construction Contractor Appraisal Support System (CCASS) in preparation for an update of these important systems. The user questionnaire is now available at http://wpc21.usace.army.mil:9612/owsccass/owa/welcome_2cas. Take a few minutes to provide your user feedback. The information gathered with this questionnaire would be used to determine needed system modifications and enhancements.

Only authorized users have access to this site. Please enter your User ID/CEAP ID in the "User Name" box, and your Database or Oracle password in the "password" box. Corps users who have not previously accessed the system should contact their UPASS Administrator. The UPASS Administrator will need to establish access, as specified in <http://www.nwp.usace.army.mil/ct/i/news.htm> or more information, please contact Marilyn Nedell, 503-808-4590, or Tom Broome, 503-808-4594, at the Portland District.

POC: DON EVICK, CECW-ETE, 202-761-4227

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DENIX - AN ENVIRONMENTAL RESOURCE

Recently HQ staff participated in a Defense Environmental Network and Information eXchange (DENIX) Functional Working Group Meeting. The meeting revealed that the USACE is one of the most frequent users of the web site available at <http://www.denix.osd.mil>, by environmental professionals primarily in the districts, MSC's, and separate offices. In October 2000, there were 9660 "hits" by 351 of the 1298 registered users in the USACE.

For those that haven't frequented the site, DENIX serves as a one-stop shop for information on environmental policy and guidance. DENIX provides the capability to review environmental, safety, health and fire publications online, perform full text searching of DENIX and other web sites, identify new information posted, participate in discussions covering various subjects, obtain current DOD policy, federal and state laws and regulations, locate environmental conferences, training classes and job opportunities, and connect to other Web sites and hosts containing environmental, safety, health and fire information.

Anyone may access the Public menu; however, a user authentication is required to access the DOD, State and International menus. To obtain a login and password, fill out the online user registration form on the DENIX home page, call (217) 373-6790, or e-mail acctmgr@www.denix.osd.mil for an application.

For frequent DENIX users, we would like to get your feedback on how to make an excellent system better and if you would like to participate on a Work Group to tailor DENIX to your specific needs. Constructive criticism always appreciated. Please provide your comments to Bruce Wallace, (703) 428-7335, or Ms Johnette Shockley, (402) 697-2558.

POC: BRUCE WALLACE, CECW-ETV, 703-428-7335

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Open Discussion and Comments

No Items Submitted for this Issue.

(Editors' note: If you want to share your thoughts with our readers regarding a subject of general interest, send an email to the E&C News editor at charles.pearre@usace.army.mil. A synopsis of your comments will be published next time).

Editors' Notes

SUBSCRIBE TO ECNEWS

Engineering and Construction News uses a subscription list on the Corps List Server. The name of the list is LS-ECNEWS. The purpose of the list is to distribute the Engineering and Construction community newsletter, *Engineering and Construction News*.

You can subscribe or unsubscribe to LS-ECNEWS by sending an e-mail message to majordomo@usace.army.mil with no subject line and only a single line of text in the message body. That single line of text should have the following format: **subscribe ls-ecnews** or **unsubscribe**

ls-ecnews. The List Server system will automatically pick up your originating e-mail address from the message and add it to or delete it from the distribution list.

If you have any questions about the list server, see the List Server E-Mail Delivery System web page at <http://eml01.usace.army.mil/other/listserv.html>. Or you may contact Charles Pearre if you have additional questions on the subscription list.

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